

## PATENT COOPERATION TREATY

**FAX IN**From the:  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

Yu Sam Audrey & Partners  
190 Middle Road, #12-04  
Singapore 188979**PCT**NOTIFICATION OF TRANSMITTAL OF  
INTERNATIONAL PRELIMINARY  
REPORT ON PATENTABILITY  
(Chapter II of the Patent Cooperation Treaty)

(PCT Rule 71.1)

Date of mailing  
(day/month/year) 23 MAY 2006Applicant's or agent's file reference  
AY/2005.1846**IMPORTANT NOTIFICATION**

International application No.

PCT/SG2005/000106

International filing date (day/month/year)

1 April 2005

Priority date (day/month/year)

2 April 2004

Applicant

AGENCY FOR SCIENCE, TECHNOLOGY AND RESEARCH et al

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary report on patentability and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translations to those Offices.
4. **REMINDER**  
  
The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).  
  
Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.  
  
For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the *PCT Applicant's Guide*.  
  
The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed invention is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

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**PATENT COOPERATION TREATY**  
**PCT**  
**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**  
 (Chapter II of the Patent Cooperation Treaty)  
 (PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>AY/2005.1846</b>	<b>FOR FURTHER ACTION</b>	See Form PCT/IPEA/416
International application No. <b>PCT/SC2005/000106</b>	International filing date ( <i>day/month/year</i> ) <b>1 April 2005</b>	Priority date ( <i>day/month/year</i> ) <b>2 April 2004</b>
International Patent Classification (IPC) or national classification and IPC  Int. Cl. <b>G06T 7/60 (2006.01) A61B 5/055 (2006.01)</b>		
Applicant <b>AGENCY FOR SCIENCE, TECHNOLOGY AND RESEARCH et al</b>		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of **3** sheets, including this cover sheet.

3. This report is also accompanied by ANNEXES, comprising:

a. ☐ (sent to the applicant and to the International Bureau) a total of \_\_\_\_\_ sheets, as follows:

☐ sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).

☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.

b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) \_\_\_\_\_, containing a sequence listing and/or table related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

☒ Box No. I Basis of the report

☐ Box No. II Priority

☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

☐ Box No. IV Lack of unity of invention

☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability: citations and explanations supporting such statement

☐ Box No. VI Certain documents cited

☐ Box No. VII Certain defects in the international application

☐ Box No. VIII Certain observations on the international application

Date of submission of the demand <b>1 February 2006</b>	Date of completion of this report <b>19 May 2006</b>
Name and mailing address of the IPEA/IAU <b>AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustralia.gov.au Facsimile No. (02) 6283 3929</b>	Authorized Officer  <b>ROBERT BARTRAM</b> Telephone No. (02) 6283 2215

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No. ...

PCT/SG2005/000106

Box No. 1	Basis of the report																				
1.	With regard to the language, this report is based on: <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> The international application in the language in which it was filed</li> <li><input type="checkbox"/> A translation of the international application into _____, which is the language of a translation furnished for the purposes of:               <ul style="list-style-type: none"> <li><input type="checkbox"/> international search (under Rules 12.3(a) and 23.1 (b))</li> <li><input type="checkbox"/> publication of the international application (under Rule 12.4(a))</li> <li><input type="checkbox"/> international preliminary examination (Rules 55.2(a) and/or 55.3(a))</li> </ul> </li> </ul>																				
2.	With regard to the elements of the international application, this report is based on (replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report): <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> the international application as originally filed/furnished</li> <li><input type="checkbox"/> the description:               <table border="0"> <tr> <td>pages</td> <td>as originally filed/furnished</td> </tr> <tr> <td>pages*</td> <td>received by this Authority on _____ with the letter of</td> </tr> <tr> <td>pages*</td> <td>received by this Authority on _____ with the letter of</td> </tr> </table> </li> <li><input type="checkbox"/> the claims:               <table border="0"> <tr> <td>pages</td> <td>as originally filed/furnished</td> </tr> <tr> <td>pages*</td> <td>as amended (together with any statement) under Article 19</td> </tr> <tr> <td>pages*</td> <td>received by this Authority on _____ with the letter of</td> </tr> <tr> <td>pages*</td> <td>received by this Authority on _____ with the letter of</td> </tr> </table> </li> <li><input type="checkbox"/> the drawings:               <table border="0"> <tr> <td>pages</td> <td>as originally filed/furnished</td> </tr> <tr> <td>pages*</td> <td>received by this Authority on _____ with the letter of</td> </tr> <tr> <td>pages*</td> <td>received by this Authority on _____ with the letter of</td> </tr> </table> </li> <li><input type="checkbox"/> a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.</li> </ul>	pages	as originally filed/furnished	pages*	received by this Authority on _____ with the letter of	pages*	received by this Authority on _____ with the letter of	pages	as originally filed/furnished	pages*	as amended (together with any statement) under Article 19	pages*	received by this Authority on _____ with the letter of	pages*	received by this Authority on _____ with the letter of	pages	as originally filed/furnished	pages*	received by this Authority on _____ with the letter of	pages*	received by this Authority on _____ with the letter of
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3.	The amendments have resulted in the cancellation of: <ul style="list-style-type: none"> <li><input type="checkbox"/> the description, pages</li> <li><input type="checkbox"/> the claims, Nos.</li> <li><input type="checkbox"/> the drawings, sheets/figs</li> <li><input type="checkbox"/> the sequence listing (specify):</li> <li><input type="checkbox"/> any table(s) related to the sequence listing (specify):</li> </ul>																				
4.	This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)). <ul style="list-style-type: none"> <li><input type="checkbox"/> the description, pages</li> <li><input type="checkbox"/> the claims, Nos.</li> <li><input type="checkbox"/> the drawings, sheets/figs</li> <li><input type="checkbox"/> the sequence listing (specify):</li> <li><input type="checkbox"/> any table(s) related to the sequence listing (specify):</li> </ul>																				

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/SG2005/000106

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability: citations and explanations supporting such statement

## 1. Statement

Novelty (N)	Claims 1 to 29	YES
	Claims	NO
Inventive step (IS)	Claims 1 to 29	YES
	Claims	NO
Industrial applicability (IA)	Claims 1 to 29	YES
	Claims	NO

## 2. Citations and explanations (Rule 70.7)

(a) "Automatic Extraction of the Central Symmetry (Mid-Sagittal) Plane from Neuroradiology Images" Yanxi Liu et al. The Robotics Institute, Carnegie Mellon University, Pittsburgh, PA, USA, 1996.

Retrieved on 6 May 2005, from URL:

[http://www.ri.cmu.edu/pub\\_files/pub2/liu\\_yanxi\\_1996\\_1/liu\\_yanxi\\_1996\\_1.pdf](http://www.ri.cmu.edu/pub_files/pub2/liu_yanxi_1996_1/liu_yanxi_1996_1.pdf)

(b) "Robust Midsagittal Plane Extraction from Normal and Pathological 3-D Neuroradiology Images" Yanxi Liu et al. IEEE Transactions on Medical Imaging, Vol. 20, No. 3, March 2001, Pages 175-191.

See the whole document

(c) WO 2003/060827 A1 (KENT RIDGE DIGITAL LABS et al) 24 July 2003

(d) "Computation of the Mid-Sagittal Plane in 3-D Brain Images" S. Prima et al. IEEE Transactions on Medical Imaging, Vol. 21, No. 2, February 2002, Pages 122-138.

(e) WO 2004/034178 A2 (LABORATORIES FOR INFORMATION TECHNOLOGY et al) 22 April 2004

**Novelty (N) and Inventive Step (IS):**

None of these citations or any obvious combination of them disclose all of the features defined in claims 1 to 29. In particular the features of a method for determining a candidate sagittal direction for a brain image as per claim 1 and comprising defining a first 3D volume of interest of said brain, obtaining brain volume data in said 1<sup>st</sup> volume for a first plurality of slices in said first direction, defining a 2<sup>nd</sup> 3D volume of interest, obtaining brain volume data in said 2<sup>nd</sup> volume for a 2nd plurality of slices in said 2<sup>nd</sup> direction, defining a 3<sup>rd</sup> 3D volume of interest, obtaining brain volume data in said 3<sup>rd</sup> volume for a 3<sup>rd</sup> plurality of slices in said 3<sup>rd</sup> direction, determining a measure for each slice of said 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> plurality of slices, for each 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> plurality of slices plotting said measure for each slice of said plurality of slices, sequentially along a plot axis corresponding to respective 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> directions to produce 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> measure plots, and determining from said measure plots which of the 1<sup>st</sup>, 2<sup>nd</sup>, or 3<sup>rd</sup> directions is said candidates sagittal direction with a candidate plurality of slices associated therewith. Furthermore the citations fail to disclose selecting a candidate mid-sagittal slice among a plurality of slices based on identifying an optimal measure amongst said measures determined for each slice of said plurality of slices as defined in claim 11.

Therefore the invention defined in claims 1 to 29 are considered to be both novel and inventive in light of these documents.